

## CLAIMS

1. A needle insertion device (1) comprising:
  - a housing,
  - 5 - a mounting surface (20, 30) adapted for application to the skin of a subject, the mounting surface comprising a first portion being fixed relative to the housing, the first portion defining a general plane, and a second portion having a needle aperture (33) formed therein,
  - adhesive means (50) arranged on the first and second portions of the mounting surface for adhering the insertion device to the skin of the subject,
  - 10 - a needle (60) comprising a distal pointed end (61) adapted to penetrate the skin of the subject,
  - wherein the second portion is moveable between a first position in which the pointed end of the needle is arranged within the housing relative to the second portion, and a second position in which the pointed end of the needle projects through the needle aperture.
- 15 2. A needle insertion device as defined in claim 1, wherein the first portion surrounds the second portion.
3. A needle insertion device as defined in claim 2, further comprising actuating means  
20 (10, 80) for moving the second portion between the first and the second position.
4. A needle insertion device as defined in claim 3, wherein the actuating means is adapted for also moving the first portion between the second and the first position.
- 25 5. A needle insertion device as defined in claim 3, comprising a base portion (20) providing the first portion of the mounting surface, an actuating member (10), and an aperture member (30) providing the second portion of the mounting surface, the actuating member being moveable relative to the base portion between a first and a second position, whereby the aperture member is moved between its first and second position.
- 30 6. A needle insertion device as defined in claim 5, wherein the actuating member is adapted for also moving the aperture member between the second and the first position.
7. A needle insertion device as defined in claim 5, further comprising transmission  
35 means (80) arranged between the actuating member and the aperture member for transmitting movement from the actuating member to the aperture member.

8. A needle insertion device as defined in claim 7, wherein the transmission means comprises a bi-stable member having a first position corresponding to the first position of the aperture member, and a second position corresponding to the second position of the aperture member.
9. A needle insertion device as defined in claim 5, further comprising an elastic surface member (40) bridging the transition between the base portion and the moveable aperture member.
10. A needle insertion device as defined in claim 9, wherein the elastic surface member substantially covers the base portion and the aperture member to provide a common surface.
11. A needle insertion device as defined in claim 2, wherein the first and second portions of the mounting surface are arranged substantially in the same plane when the first portion is positioned in its first position.
12. A needle insertion device as defined in claims 2, wherein the needle is non-displaceable relative to the first portion of the mounting surface.
13. A needle insertion device (101) as defined in claim 1, comprising a bi-stable base member (120) in which the needle aperture (122) is arranged, the bi-stable member at least defining the second portion (124) of the mounting surface (121), and having a first outwardly-curving position in which the pointed end of the needle (160) is arranged within the housing relative to the second portion, and a second inwardly-curving position in which the pointed end of the needle projects through the needle aperture.
14. A needle insertion device as defined in claim 1, wherein the needle is a hollow infusion needle, the device further comprising:
- a reservoir adapted to contain a liquid drug and comprising in a situation of use an outlet in fluid communication with the infusion needle, and, preferably,
  - expelling means for expelling a drug out of the reservoir and through the skin of the subject via the common fluid conduit means and a hollow needle.

15. A needle device as defined in claim 1, wherein the needle is in the form of a needle sensor (260) comprising sensor means (261) capable of being influenced by a body substance and producing a signal corresponding thereto.
- 5 16. A needle device as defined in claim 15, further comprising an insertion needle (265) adapted to cooperate with a corresponding needle sensor for inserting the needle sensor subcutaneously.